

IN THE CLAIMS

1. (Currently Amended) A method for an IPv6 enabled node ~~to engage in IPv6 communication across a network containing IPv4 components through an IPv6 connect agent that connects the IPv6 enabled node to the network, the method comprising:~~

transmitting a query identifying the IPv6 enabled node to a Domain Name System server;
receiving, from the Domain Name System server, a list comprising at least one name of an IPv6 connect agent determined by the Domain Name System server based on an identifier of the IPv6 enabled node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

transmitting a name of a desired IPv6 connect agent to the Domain Name System server, the name of the desired IPv6 connect agent being selected from the list;

receiving an address of the desired IPv6 connect agent from the Domain Name System server; and

engaging in IPv6 communication across the network using the address.

2. (Cancelled).

3. (Cancelled).

4. (Cancelled).

5. (Cancelled).

6. (Previously Presented) The method of claim 1, wherein the desired IPv6 connect agent is one closest to the IPv6 enabled node.

7. (Cancelled).

8. (Previously Presented) The method of claim 1, wherein the desired IPv6 connect agent is one whose name is first received from the Domain Name System server.

9. (Cancelled).

10. (Previously Presented) The method of claim 1, wherein the identifier comprises an Internet Protocol address.

11. (Previously Presented) The method of claim 1, wherein the identifier comprises a Media Access Control address.

12. (Previously Presented) The method of claim 1, wherein the identifier comprises a character string.

13. (Currently Amended) A method for a Domain Name System server ~~in a network containing IPv4 components to provide to an IPv6 enabled node an address of an IPv6 connect agent that connects the IPv6 enabled node to the network~~, the method comprising:

receiving a query identifying ~~the an~~ IPv6 enabled node from the IPv6 enabled node;

determining at least one IPv6 connect agent based on an identifier of the IPv6 enabled node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

transmitting a list comprising at least one name of the IPv6 connect agent determined to the IPv6 enabled node;

receiving a name of a desired IPv6 connect agent from the IPv6 enabled node, the name of the desired IPv6 connect agent being selected from the list by the IPv6 enabled node; and

transmitting an address of the desired IPv6 connect agent to the IPv6 enabled node.

14. (Cancelled).

15. (Cancelled).

16. (Cancelled).

17. (Cancelled).

18. (Cancelled).

19. (Cancelled).

20. (Previously Presented) The method of claim 13, further comprising:

- searching a record corresponding to the name of the desired IPv6 connect agent from a lookup table; and
- finding the address of the desired IPv6 connect agent from the record.

21. (Previously Presented) The method of claim 20, wherein the record is a Naming Authority Pointer Domain Name System resource record.

22. (Previously Presented) The method of claim 13, wherein the identifier comprises an Internet Protocol address.

23. (Previously Presented) The method of claim 13, wherein the identifier comprises a Media Access Control address.

24. (Previously Presented) The method of claim 13, wherein the identifier comprises a character string.

25. (Currently Amended) ~~An IPv6 enabled node for engaging in IPv6 communication across a network containing IPv4 components through an IPv6 connect agent that connects the IPv6 enabled node to the network, the node comprising:~~

- a software portion that transmits a query identifying the IPv6 enabled node to a Domain Name System server;

- a software portion that receives, from the Domain Name System server, a list comprising at least one name of an IPv6 connect agent determined by the Domain Name System server based on an identifier of the IPv6 enabled node included in the

query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

a software portion that transmits a name of a desired IPv6 connect agent to the Domain Name System server, the name of the desired IPv6 connect agent being selected from the list;

a software portion that receives an address of the desired IPv6 connect agent from the Domain Name System server; and

a software portion that engages in IPv6 communication across the network ~~containing IPv4 components~~ using the address.

26. (Cancelled).

27. (Cancelled).

28. (Cancelled).

29. (Cancelled).

30. (Currently Amended) A Domain Name System server device ~~in a network containing IPv4 components to provide to an IPv6 enabled node an address of an IPv6 connect agent that connects the IPv6 enabled node to the network, the Domain Name System server device~~ comprising:

a software portion that receives a query identifying ~~the~~ an IPv6 enabled node from the IPv6 enabled node;

a software portion that determines at least one IPv6 connect agent based on an identifier of the IPv6 enabled node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

a software portion that transmits a list comprising at least one name of the IPv6 connect agent determined to the IPv6 enabled node;

a software portion that receives a name of a desired IPv6 connect agent from the IPv6 enabled node, the name of the desired IPv6 connect agent being selected from the list by the IPv6 enabled node; and

a software portion that transmits an address of the desired IPv6 connect agent to the IPv6 enabled node.

31. (Cancelled).

32. (Cancelled).

33. (Cancelled).

34. (Previously Presented) The Domain Name System server device of claim 30, further comprising:

a software portion that searches a record corresponding to the name of the desired IPv6 connect agent from a lookup table; and

a software portion that finds the address of the desired IPv6 connect agent from the record.

35. (Currently Amended) A computer readable storage containing a program for an IPv6 enabled node ~~to engage in IPv6 communication across a network containing IPv4 components through an IPv6 connect agent that connects the IPv6 enabled node to the network~~, the program making a computer execute:

transmitting a query identifying the IPv6 enabled node to a Domain Name System server;
receiving, from the Domain Name System server, a list comprising at least one name of an IPv6 connect agent determined by the Domain Name System server based on an identifier of the IPv6 enabled node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

transmitting a name of a desired IPv6 connect agent to the Domain Name System server, the name of the desired IPv6 connect agent being selected from the list by the IPv6 enabled node;

receiving an address of the desired IPv6 connect agent from the Domain Name System server; and

engaging in IPv6 communication across the network ~~containing IPv4 components~~ using the address.

36. (Cancelled).

37. (Cancelled).

38. (Cancelled).

39. (Cancelled).

40. (Currently Amended) A computer readable storage containing a program for a Domain Name System server ~~in a network containing IPv4 components to provide to an IPv6 enabled node an address of an IPv6 connect agent that connects the IPv6 enabled node to the network~~, the program making a computer execute:

receiving a query identifying ~~the an~~ IPv6 enabled node from the IPv6 enabled node;

determining at least one IPv6 connect agent based on an identifier of the IPv6 enabled

node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;

transmitting a list comprising at least one name of the IPv6 connect agent determined to the IPv6 enabled node;

receiving a name of a desired IPv6 connect agent from the IPv6 enabled node, the name of the desired IPv6 connect agent being selected from the list by the IPv6 enabled node; and

transmitting an address of the desired IPv6 connect agent to the IPv6 enabled node.

41. (Cancelled).

42. (Cancelled).

43. (Cancelled).

44. (Previously Presented) The computer readable storage of claim 40, the program making the computer further execute:

- searching a record corresponding to the name of the desired IPv6 connect agent from a lookup table; and
- finding the address of the desired IPv6 connect agent from the record.

45. (Currently Amended) An IPv6 enabled node ~~to engage in IPv6 communication across a network containing IPv4 components through an IPv6 connect agent that connects the IPv6 enabled node to the network, the IPv6 enabled node~~ comprising:

- means for transmitting a query identifying the IPv6 enabled node to a Domain Name System server;
- means for receiving, from the Domain Name System server, a list comprising at least one name of an IPv6 connect agent determined by the Domain Name System server based on an identifier of the IPv6 enabled node included in the query, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;
- means for transmitting a name of a desired IPv6 connect agent to the Domain Name System server, the name of the desired IPv6 connect agent being selected from the list;
- means for receiving an address of the desired IPv6 connect agent from the Domain Name System server; and
- means for engaging in IPv6 communication across the network ~~containing IPv4 components~~ using the address.

46. (Cancelled).

47. (Cancelled).

48. (Cancelled).

49. (Cancelled).

50. (Currently Amended) A Domain Name System server device ~~in a network containing IPv4 components to provide to an IPv6 enabled node an address of an IPv6 connect agent that connects the IPv6 enabled node to the network,~~ the Domain Name System server device comprising:

- means for receiving a query identifying ~~the~~an IPv6 enabled node from the IPv6 enabled node;
- means for determining at least one IPv6 connect agent based on an identifier of the IPv6 enabled node included in the query;
- means for transmitting a list comprising at least one name of the IPv6 connect agent determined to the IPv6 enabled node, the IPv6 connect agent connecting the IPv6 enabled node to a network containing IPv4 components;
- means for receiving a name of a desired IPv6 connect agent from the IPv6 enabled node, the name of the desired IPv6 connect agent being selected from the list by the IPv6 enabled node; and
- means for transmitting an address of the desired IPv6 connect agent to the IPv6 enabled node.

51. (Cancelled).

52. (Cancelled).

53. (Cancelled).

54. (Previously Presented) The Domain Name System server device of claim 50, further comprising:

- means for searching a record corresponding to the name of the desired IPv6 connect agent from a lookup table; and
- means for finding the address of the desired IPv6 connect agent from the record.